2/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109969

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDITIONES OF SURFACTANTS CHANGES THE SEDIMENTATION KINETICS OF SUSPENSIONS (CACO SUB3, FE SUB2 O SUB3, CAF SUB2), INCREASES THE VOLUME FRACTION OF THE SOLID PHASE IN THE SEDIMENT AND DIMINISHES THE STRENGTH OF COAGULATION STRUCTURES IN POWDER DISPERSIONS BOTH IN A LIQUID HYDROCARBON MEDIUM AND IN AIR. IN DISPERSIONS WITH MIXED SOLID PHASES SMALL ADDITIONS OF A SECOND DISPERSED PHASE HAVE A SIMILAR EFFECT.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ESOPHAGEAL LEIOMYOMAS -U-

AUTHOR-(04)-KISS, J., SENTKERESTI, B., ZAKO, Z., NAGY, M.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 5, PP 93-95

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM, TUMOR, STOMACH, SURGERY, ARTERIAL ANASTOMOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1737 STEP NO--UR/0475/70/000/005/0093/0095

CIRC ACCESSION NO--AP0129105

UNCLASSIFIED

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0129105 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ESOPHAGEAL LEIOMYOMA IS A RATHER RARE DISEASE. UP TO NOW ABOUT 200 CASES OF ESOPHAGEAL LEIOMYOMAS HAVE BEEN DESCRIBED IN THE LITERATURE. THE AUTHORS OPERATED UPON TWO PATIENTS WITH ESOPHAGEAL LEIOMYOMA. IN A 46 YEARS OLD WOMAN THE TUMOUR WAS SITUATED IN THE LOWER PART OF THE ESOPHAGUS AND INVOLVED THE UPPER PART OF THE STOMACH. ESOPHAGOGASTECTOMY WAS PERFORMED WITH END TO SIDE ANASTOMOSIS. IN A 30 YEARS OLD MAN THE TUMOUR WAS AT THE TRACHEAL BIFURCATION LEVEL AND IT WAS ENUCLEATED AT OPERATION. THE RESULT WAS FAVOURABLE. THE CLINICAL PICTURE AND COURSE OF ESOPHAGEAL LEIOMYOMAS ARE PRESENTED.

UNCLASSIFIED

USSR

UDC: 620.169.1-192.05

ZAKOLDAYEV, Yu. A., YAROSHENKO, V. V.,

"Device for Automatic Testing of Operability of Output Amplifiers of Logical Control Devices"

Tezisy Dokl. k Nauchn-Tekhn. Konf. na Temu: Probl. Sozdaniya Sistem Upr. Sudovymi Techn. Sredstvami, 1971 [Theses of Reports at Scientific and Technical Conference on the Problem of Creation of Shipboard Equipment Control Systems, 1971], Leningrad 1971, p 48 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A346 from the resume)

Translation: One peculiarity of the circuits used in devices testing output amplifiers (OA) is operation involving waiting, processing, and rejecting OA, as well as the fact that checking of operation of OA is performed both with and without information from the outputs of the logic channels. The structural systems of test devices include: test pulse shapers, OA test circuit, signal collecting circuits, a circuit to make the determination "OA failed," and a master circuit. It is shown to be possible to produce such a unit using microelectronics elements. The principles of organization of a program allowing minimization of the number of logic conditions by a method other than total trial are presented.

1/1

USSR

UDC 632.95

ALIMOV, P. I., VASHKOV, V. I., VOLKOVA, A. P., ZAKOLODKINA, V. I., IRANDOVA, I. I., KERBABAYEV, E. B., NEKLESOVA, I. D., STERL'NIKOVA, G. N., FROLOVA, A. I.

"Insecticidal Properties of Methyl-O-Ethyl (Carbethoxymethyl) Dithiophosphonate"

Tr. VNII dezinfektsii i sterilizatsii (Works of the All-Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, t. 2, pp 73-76 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N427)

Translation: The results of experiments in studying the insecticidal activity of Me(EtO)P(S)SCH_2COOEt (I) (boiling point 89-92°C/0.02, $n^{20}D$ 1.5220) show that the compound has a fumigation effect and some contact action, but less than chlorophos. When applied to absorptive surfaces, the chemical is completely ineffective against household insects. Compound I has fumigatory activity against houseflies and is a larvicide against maggots. T. A. Belyayeva.

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USSR

UDC 632.95

ALIMOV, P. I., VASHKOV, V. I., VOLKOVA, A. P., ZAKOLODKINA, V. I., ZUBOVA, G. M., IRANDOVA, I. I., KERBABYEV, E. B., NEKLESOVA, I. L., STREL'NIKOVA, G. N., and FROLOVA, A. I.

"Insecticidal Properties of O-Methyl-O-Dichlorovinyl-N-Dimethyl Amidophosphate"

Tr. VNII dezinfektsii i steriliz. (Works of the All Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, t. 2, pp 68-73 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N423)

Translation: The substance of formula $(MeO)Me_2NP(O)OCH{=}CCl_2$ (I) has strong contact, fumigation and intestinal action at the instant of application on houseflies, bedbugs and red cockroaches; the agent is not as strong as other organophosphorus insecticides with respect to mosquitoes. The most active form for application to a glass surface is a water emulsion prepared from compound I with OP-7 (1:1) and a solution in acetone. An alcohol solution is considerably less active. An investigation is made of the larvicidal activity of compound I. The insecticide has no residual effect. T. A. Belyayeva.

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USSR

UDC 632.95

VASHKOV, V. I., ZAKOLUDKINA, V. I., KERBABAYEV, E. B., LARIONOVA, V. D., and STREL'NIKOVA, G. N.

"Insecticidal Properties of Agents Containing Bromophos and Ethyl-Bromophos"

Tr. VNII dezinfektsii i sterilizatsii (Works of the All-Union Scientific Research Institute of Dininfection and Sterilization), 1971, vyp. 21, t. 2, pp 157-167 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N425)

Translation: Insecticides SKh-99 (active agent bromophos), neksagen YeS-80, filariol-20 and filariol-60 (active agent ethyl-bromophos) were tested on houseflies, bedbugs, red cockroaches and mosquitoes. The contact action was compared with that of chlorophos. The insecticides have a considerable residual effect, retaining their insecticidal activity up to 1.5 months when applied to glass. When applied directly to the insects, the best of the chemical is filariol-60; its insecticidal properties are 1-8 times higher than those of chlorophos. When insects come into contact with a glass surface treated with the insecticides, the best chemical is neksagan. Filariol-20, Skh-99 and neksagan YeS-80 are also effective larvicides against Aedes mosquitoes. T. A. Belyayeva.

USSR

ZAKOMYRDIN, A.

"The Second All-Union Conference on the Application of Aerosols in National Economy"

Moscow, Veterinariya, No 1, Jan 73, pp 126-127

Abstract: The 2nd All-Union Conference on the Application of Aerosols in National Economy was held at Odessa University on 25-28 Sep 72. Besides two plenary sessions, meetings of the following sections were held: physical chemistry of aerosols, industrial aerosols and the design of equipment, medical aerosols, agricultural applications, and veterinary applications. The papers presented at meetings of the veterinary section, the chairman of which was Prof V. S. Yarnykh, were on the subject of therapeutic and prophylactic applications of aerosols in veterinary medicine. Dr Kurtzweg, Director of the GDR Institute of Veterinary Hygiene, participated at meetings of the section. In 28 papers dealing with problems pertaining to the application of aerosols in animal husbandry, results were reported of work on the immunization of animals with aerosols, disinfection and insect control measures in animal husbandry buildings, protection of animals from ectoparasites, control of arthropod pests in nature, and the inhalation chemotherapy of animals. On the

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720013-1"

USSR

ZAKOMYRDIN, A., Veterinariya, No 1, Jan 73, pp 126-127

theoretical level, problems pertaining to the kinetics of inactivation of bacteria and viruses by aerosols of chemical disinfectants, the mechanism of the disinfecting action of aerosols of formaldehyde-containing compounds, structural changes in bacteria in the aerosol state, and applications of aerosols of vaccines and therapeutic agents were considered. In a resolution passed by the veterinary section, recommendations were made to expand theoretical work on the dispersion of biological and chemical agents to form aerosols for applications in animal husbandry; the mechanisms and principles of formation of immunity in animals after aerosol immunization; the toxic action of aerosols; and the pharmacodynamics of aerosols of biological and chemical agents. It was also suggested that more active and less toxic chemical agents be developed for applications in the form of aerosols in animal husbandry. The Ministry of Agriculture USSR was requested to consider the problem of developing and distributing aerosol generators for veterinary purposes. The resolution suggested that the work of the Veterinary Section of the Council on Aerosols at the State Committee of Science and Technology be activated and that this section undertake the organization of regular conferences (at least once every two years) on the application of aerosols in animal husbandry.

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USSR

UDC 632.952

VAS'KOVSKAYA, L. F., SAMOSVAT, L. S., ZAKORDONETS, V. A., BURSHTEYN, A. L., All-Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymer Materials and Plastics

"Determination of Residual Quantities of Keltane in Water, Fruit (Including Citrus) and Vegetables"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 10 (84), Oct 70, pp 44-46

Abstract: A method is proposed for determining residual quantities of keltane (4,4'-dichlorodiphenyltrichloromethylcarbional) in water and on plants. The procedure is based on thinlayer chromatography with appropriate selection of the mobile phase of distinguishing keltane from accompanying organochlorine poisons. The method is specific in the presence of DDT, DDE, DDD and hexachlorocyclohexane. The method is capable of a sensitivity of 1-2 µg in a sample, which is 0.05-0.1 mg/kg in analysis of fruits and vegetables, and 0.01-0.02 mg/lirer in alaysis of water.

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USSR

UDC 536.48

ALEKSEYEVSKIY, N. Ye., Corresponding Member of the USSR Academy of Sciences, and ZAKOSARENKO, V. M.

"Superconductivity in Beryllium Alloys"

Moscow, Doklady Akademii Nauk SSSR, 11 January 1973, pp 303-306

Abstract: Listing a number of qualities of beryllium that make the metal interesting, among them the fact that some of its alloys have a relatively high, critical temperature, the authors discuss superconductivity in such metals. A description of the preparation process they used for the specimens in their investigations is given together with a table of different beryllium alloys and their critical and intermediate temperatures. As the table indicates, superconductivity was observed in Be-Ga alloys. Curves are given for in which it is shown that the maximum T_c is that of Be_3Ga, and for the magnetic moment as a function of the magnetic field for a specimen of this alloy. The authors thank V. F. Shamray for the x-ray structural analysis used on alloys of beryllium with metals of the platinum group.

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USSR

ALEKSEYeVSKIY, N. Ye., and ZAKOSARENKO, V. M., Institute of Physical Problems of the Academy of Sciences of the USSR

"The Superconductivity of Cold-Plated Films of Germanium Alloys With Elements of the Platinum Group"

Moscow, Pis'ma v ZhETF, Vol 18, No 2, 20 July 1973, pp 94-98

Abstract: Unstable superconducting modifications have been found in cold-deposited films of Ge-Pt and Ge-Pd alloys. The Ge-Pd system is used in a study of critical temperature as a function of the composition, and the dimensions of the critical magnetic fields are measured.

No superconductivity was observed in alloys of germanium with rubidium, osmium, or rhodium. The highest superconductivity temperature of the Ge-Pd film was three degrees K, which occurred for a value of 40% Pd; after the film was heated to 300°K, this value was only 2°K, but the peak still occurred at approximately 40% Pd. Heating to 300°K eliminated the superconductivity of the Ge-Pt films, even down to 1.0°K.

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USSR

ALEKSEYeVSKIY, N. Ye., and ZAKOSARENKO, V. M., Pis'ma v ZhETF, Vol 18, No 2, 20 July 1973, pp 94-98

The critical perpendicular magnetic field through the film was also measured. This value was a practically linear function of temperature, changing at a rate of 6190 oersteds per degree Kelvin plus or minus 5% for the heated films and 5760 oersteds per degree Kelvin plus or minus 8% for the cold deposited films.

It is theorized that the unstable phases are probably characterized by weaker interactions among the atoms, so that the mean oscillation frequency would be lower and the average distance between atoms greater than in the stable phases, leading to a lower overlap of the ψ function of the electrons and the formation of narrower zones.

USSR UDC 536.48

ALEKSEYEVSKIY, N. Ye, Associate Member of the Academy of Sciences USSR, and ZAKOSARENKO, V. M., Institute of Physical Problems imeni S. I. Vavilov of the Academy of Sciences USSR

"Superconductivity of Beryllium Alloys"

Moscow, Doklady Akademii Nauk USSR, 1973, Vol 208, No 2, pp 303-306

Abstract: The superconductivity of beryllium alloys was investigated by measuring the critical temperature (Tc) of specimens prepared from Be with the ratio of resistances $R_{300}/R_{4.2} \approx 100\text{-}500$ and their magnetic moment dependence on the magnetic field. The measurements revealed a superconductivity in the system of Be-Ga alloys. The Tc dependence on Ga-concentration shows that Tc-maximum corresponds with the Be_3Ga composition. Alloys of $MgZn_2$-type structure do not turn into the superconductive state at $T \geq 1.5^{\circ}K$, except Be_5Pt (probable structure of $MgCu_2$-type) which changes to superconductivity at 2.3 $^{\circ}K$. Among Be alloys of $Be_{22}M$ and $Be_{13}M$ compositions, besides the previously known alloys, only $Be_{13}Ru$ was found superconductive ($T=1.3\ ^{\circ}K$). Other new superconductive alloys are indicated. Three figures, one table, nine bibliographic references.

Acc. Nr.: AP0029113

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii, 1970, Vol 70, Nr 1, pp 72-76.

CHANGED FERMENTATIVE ACTIVITY IN THE MUSCULAR TISSUE IN PROGRESSIVE MUSCULAR DYSTROPHIA

L. O. Badalyan, E. D. Tamarkina, Ye. S. Bondarenko, L. V. Zaboshchikova

The activity of creatinphosphokinase, lactic de hydrogenase and malatdehydrogenase was studied directly in the affected muscle in 30 patients with different forms of progressive muscular dystrophy. The results of such studies displayed an increased enzymatic activity in the affected muscle and a tendency towards its decrease, as the severity of motor disorders grows. The maximum amount of enzimatic activity was seen during the first years following the appearance of clinical symptoms. In the subsequent periods the anzymatic activity dropped. A study of the normal relatives in such cases also displayed an increased enzymatic activity. The obtained data shows the dependency of the enzimatic activity from the type of hereditary transmission in progressive muscular dystrophy. The highest indices of enzymatic activity were seen in patients with a recessive x-chromosome type of transmission and less high in the autosome-recessive and autosome-dominant type. These results stress the expediency of determining the enzimatic activity in muscular tissues for the diagnostics and prognosis of progressive muscular dystrophy along with other methods of investigation.

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REEL/FRAME

19680624

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USSR

UDC: 577.4

ZAKREVSKIY, A. D., POTTOSIN, Yu. V., ROTKO, V. F., TOROPOV, N. R., YANKOVSKIY, A. Ye.

"Systems and Programs for Synthesizing Discrete Devices. A System for Automatic Synthesis of Discrete Automata"

Inform. materialy. Nauch. sovet po kompleks. probl. "Kibernetika" AN SSSR (Informational Materials. Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1971, No 7(54) pp 42-62 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V327)

[No abstract]

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USSR

UDC: 577.4

ZAKREVSKIY, A. D.

"Procedural Materials"

Inform. materialy. Nauch. sovet po kompleks. probl. "Kibernetika" AN SSSR (Informational Materials. Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1971, No 7(54), pp 26-41 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V326)

[No abstract]

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USSR UDC: 577.4

ZAKREVSKIY, A. D., YANKOVSKAYA, A. Ye.

"Interference-Resistant Coding of the Internal State of an Asynchronous Automaton"

Informatsionnyye materialy Nauch. sovet po kompleks. probl. "Kibernetika" AN SSSR (Informational Materials of the Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1971, No 3(50), pp 53-58 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V364)

Translation: It is shown how the algorithm from the authors' article (RZh--Mat, 1969, 12V353) should be modified in the case where stability of the automaton is to be ensured when no more than t_0 memory elements fail.
V. Khrapchenko.

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USSR UDC 51:621.391

ZAKREVSKIY, A. D., and YANKOVSKAYA, A. Ye.

"Coding of the Internal States of an Automaton"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Transactions of the Siberian Technical-Physics Institute at Tomsk University), No 51, 1970, pp 3-5 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V419)

Translation: An algorithm for coding internal states of an asynchronous automaton is proposed that eliminates inacceptable competition between memory elements. Results associated with the machine realization of this algorithm are presented.

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USSR

UDC 51:621.391

ZAKREVSKIY, A. D., YANKOVSKAYA, A. Ye.

"Coding of Internal States of an Automaton"

Tr. Sib. Fiz.-tekhn. In-ta pri Tomsk. Un-te [Works of Siberian Physics and Technology Institute at Tomsk University], No 51, 1970, pp 3-5, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V419).

Translation: An algorithm is suggested for coding the internal states of a synchronous automaton, eliminating non-permissible competition of memory elements. Results are presented related to machine realization of this algorithm.

1/1

ELECTRONICS

Amplifiers

UDC: 621.375:621.382.323

USSR

GRATSIANSKIY, I. N., ZAKREVSKIY, D. D.

"On Selecting the Operating Mode of a Field-Effect Transistor in an Amplification Stage"

Novosibirsk, Avtometriya, No 1, Jan/Feb 72, pp 86-92

Abstract: The authors analyze causes of nonlinear distortions in FET amplifiers. A method is proposed for determining the off-duty mode of a field effect transistor to reduce nonlinear distortions.

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1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--TEMPERATURE DEPENDENCE OF STIMULATED RADIATION FROM ZNS SUBX,CDS SUB1-X CRYSTALS DURING TWO PHOTON EXCITATION -U-

AUTHOR-(04)-BRODIN, M.S., BUDNIK, P.I., VITRIKHOVSKIY, N.I., ZAKREVSKIY, S.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 522-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ZINC SULFIDE, CADMIUM SULFIDE, LUMINESCENCE, PHONON, MIXED CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0989 STEP NO--UR/0449/70/004/003/0522/0526

CIRC ACCESSION NO--AP0115010

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0115010

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STIMULATED AND SPONTANEOUS LUMINESCENCE OF MIXED CRYSTALS OF ZNS (9PERCENT) AND CDS (91PERCENT) AT 4DEGREESK ARE STUDIED; ALSO, THE TEMP. DEPENDENCE OF FREQUENCY AND THE MECHANISM OF STIMULATED RADIATION IN THE 4-120DEGREESK RANGE ARE DISCUSSED. AT COMPARATIVELY LOW TEMPS. (4-66DEGREESK) LASING OF THE CRYSTAL OCCURS VIA BOUND OR RECOMBINED EXCITONS. BETWEEN 66 AND 120DEGREESK, LASING ARISES THROUGH FREE EXCITONS WITH LINEAR OPTICAL PHONON PARTICIPATION. FACILITY: INST. FIZ., KIEV, USSR.

UNCLASSIFIED

ZAKRZHEVSKIY D. A.
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JPRS 58318

26 February 1973

UDC 581.132

THE INFLUENCE OF AN ATMOSPHERE OF MOLECULAR HYDROGEN UPON THE EVOLUTION OF OXYGEN BY LEAVES OF TRADESCANTIA FLUMINENSIS VELL

[Author block illegible] and L.N. Rozanova, Institute of Photosynthesis, USSR Academy of Sciences, Pushchino and V.N. Bukhov, Institute of Geochemistry and Analytical Chemistry, USSR Academy of Sciences, Moscow

Fiziologiya Rasteniy, Russian, No. 6, Vol. 19, 1972, submitted 28 April 1972, signed to press 5 November 1972, pp 1195-1203.

The effect of atmospheres of H_2 and of He on the evolution of O_2 by leaves of Tradescantia fluminensis Vell was compared. It was shown that the function of evolution of O_2 is much more sensitive to dark preincubation in an H_2 atmosphere than the fixation of $C^{14}O_2$. After prolonged stay of the leaves in the dark in an atmosphere of H_2 (15 hours) the absorption of carbon dioxide may be realized in general without the evolution into the gaseous phase of free oxygen. Helium does not have a similar effect. On the contrary, the replacement of an atmosphere of H_2 by He leads to reactivation of the oxygen-evolving system of photosynthesis.

One of the approaches during investigation of the mechanism of biological oxidation of water up to molecular oxygen may be the study of the peculiarities of the gaseous exchange in anaerobically adapted plants. It was shown earlier that the leaves of certain higher plants preserve the capacity for fixation of carbon dioxide after prolonged incubation of them in the dark in an atmosphere of molecular hydrogen [1,2]. At a temperature of 20-25° and a light intensity of $2.4 \cdot 10^3$ ergs/cm^2 they fix $C^{14}O_2$ at a rate comparable to that in photosynthesis under aerobic conditions. Thus, for example, a 15-hour stay of Tradescantia leaves in the dark in an ordinary atmosphere reduces the intensity of subsequent photosynthesis by an average of 10 percent and preliminary incubation of the leaves in the dark in an atmosphere of hydrogen reduces the intensity of light fixation of $C^{14}O_2$ in an atmosphere of this same gas by approximately 20 percent (Figure 1).

Figure 1. The intensity of light fixation of $C^{14}O_2$ by Trebouxia leaves in an ordinary atmosphere and in an atmosphere of H_2 in dependence upon the duration of dark incubation under these conditions of the gas environment (I = $2 \cdot 10^{-3}$ erg/cm^2. second) 1) Quantity of fixed $C^{14}O_2$ relative units 2) Dark anaerobic incubation, hours.

Some peculiarities of the process studied are: sensitivity to temperature, active assimilation of carbon dioxide in the long-wave region of the spectrum and others /2-4/. At the same time, the suppression of fixation of carbon dioxide by monuron /3/ indicated the functioning of the II photochemical system of chloroplasts, which indicated the fundamental difference of the phenomenon observed from the photoreduction by algae. In the case of photoreduction by algae, as is well known, the process of assimilation of carbon dioxide is not inhibited by monuron /5,6/. Indirect data, obtained earlier /2/, indicated the fact that Trebouxia leaves, after their prolonged incubation in an atmosphere of hydrogen, may be reduced by carbon dioxide without formation of free oxygen.

Naturally, the question arose as to whether molecular hydrogen under these conditions is a competitor of water or whether it reduces the hydroxyl radical (or other form, which is obtained as the result of oxidation of bound water) and thereby impedes the formation of molecular hydrogen. Both of these alternatives were discussed in the literature in connection with the mechanism of photoreduction /7/, during which hydrogenase, localized in the I photochemical system of the chloroplasts is functioning. This question was not posed in respect to the II photochemical system.

It was necessary, in connection with this, to study, as the first stage of the investigation, the effect of prolonged incubation of leaves of higher plants in an atmosphere of helium (general experiments on the effect of anaerobiosis) on the intensity of evolution of oxygen.

ZAKRZHEVSKAYA, D.T.

Biophysics

UNCLASSIFIED

DIANA

SO: Selected Aerospace Related Facilities
PCS - 39
June 71

SECTION III

Name: Institute of Biophysics, Pushchino

Description:

(U) During this quarterly reporting period, 13 new articles were located from the Institute of Biophysics at Pushchino. On the basis of these articles, it was possible to associate 19 new persons with the institute. These persons are listed below together with the subjects and dates of the articles:

All biophysics

Bohurmanov, O. K.	endocrine system	1970 (17)
Berestovskiy, G. N.	phospholipids	1970 (18)
Gaziyev, A. I.	DNA	1970 (19)
Ivannikova, A. G.	plant physiology	1969 (20)
Kiselev, Ye. Ye.	muscle physiology	1970 (21)
Kravchenko, N. A.	EPR spectra	1970 (22)
Narimanov, A. A.	radiation effects	1970 (23)
Panov, A. A.	endocrine system	1970 (17)
Pasoyan, V. G.	EPR spectra	1970 (22)
Porotikov, V. I.	muscle physiology	1970 (21)
Postnikova, G. B.	chromatography	1970 (24)
Razhin, V. D.	phospholipids	1970 (18)
Revin, A. F.	radiation effects	1970 (23)
Sukhoruchkina, L. V.	chromatography	1970 (24)
Trincher, K. S.	plant physiology	1969 (20)
Vasiloy, Yu. V.	radiation effects	1970 (23)
Zaikin, A. N.	hydrogen peroxide	1970 (25)
Zakrzhevskaya, D. T.	DNA	1970 (19)
Zuzin, A. M.	DNA	1970 (19)

USSR

UDC 615.216:547.831

ABRAMOCHKIN, E. S., KONSHIN, M. YE., ZAKS, A. S., and ZIL'BERMAN, L. G., Permsk Pharmaceutical and Medical Institute

"Study of Heterocyclic Compounds. VIII. Substituted Amides of 2,3-Pentamethylenecholinoline-4-carboxylic Acid"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 1, Jan 72, pp 19-21

Abstract: Synthesis of the amides of 2,3-pentamethylenecholinoline-4-carboxylic acid and its 6-methyl analogue was carried out by heating the hydrochloride of the parent acyl chloride with primary or secondary amines in benzene and in presence of triethylamine. The products -- colorless crystalline compounds -- are obtained in 55-80% yields; they form water soluble chlorohydrates. The amides synthesized show maxima in the UV spectra at 232-240, 280-286, 306-312, and 320-326 mu; these maxima are shifted bathochromically with introduction of a 6-methyl substituent. The LD_{50} doses of these compounds ranged from 84-375 mg/kg body weight.

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USSR

UDC 621.791(031)

ZAKS, I. A.

"Welding of Dissimilar Steels"

Leningrad, Svarka Raznorodnykh Staley, Izd-vo Mashinostroyeniye, 1973, 208 pp

Translation of Foreword: The development of modern power engineering, the chemical and oil industry, atomic rocket, space, and other branches of technology is taking place in the direction of a continuous increase in the working temperatures, pressures, and capacities of the machines and equipment to be created, as well as an increase in the aggressiveness of the working media. Therefore on the elements and components of these machines and equipment there are often imposed requirements for combining properties (heat resistance, heat stability, magnetic permeability, electrical resistance, thermal conductivity, corrosion resistance, etcetera) which in many instance may be ensured only by the manufacture of them from dissimilar materials using welding or fusion. The necessity of manufacturing welded structures from dissimilar materials is often dictated also by economic considerations.

The specific feature of dissimilar weld joints is the presence of a group of strongly developed heterogeneities (chemical, structural, mechanical, etcetera) which exerts a substantial influence on their planning, choice of

USSR

ZAKS, I. A., Svarka Raznorodnykh Staley, Izd-vo Mashinostroyeniye, 1973, 208 pp

weld materials, technique of manufacture, and testing.

Well-qualified accounting for these factors at all stages of manufacture of dissimilar weld joints facilitates their exploitational reliability and lifetime.

The basic problems and laws determining the heterogeneity in composition, structure, and properties of weld joints have been most fully studied and clarified in references (4-6, 11-14, 28, 38, 53, 63, and others).

The overall clarification of the problems of welding dissimilar steels was first done by V. N. Zemzinin (28).

Dissimilar weld joints just as uniform ones are being made by all available methods of welding and fusion; however, structures of complex shape, large-scale ones with different spatial arrangements of the seams, etcetera, are being prepared mainly by manual electroarc welding as the most general-purpose and sufficiently productive process. Therefore the choice of weld materials for manual arc welding has great practical interest.

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USSR

ZAKS, I. A., Svarka Raznorodnykh Staley, Izd-vo Mashinostroyeniye, 1973, 208 pp

In the present work an attempt is made to systematize the brands of steels most commonly used in industry with respect to their similar properties and weldability, possible combination in preparing welded structures, and also to justify the choice of types and grades of electrodes for welding them. Recommendations are also made for the conditions of heating and annealing of the dissimilar weld joints based on industrial experience and the numerous literature data for the production of optimal properties of the finished products.

Taking into account the diversity and complexity of the questions involved in selecting electrodes for welding dissimilar joints with respect to the specific conditions of their exploitation, in no way does it follow to assume that this work fully clarifies and exhausts this problem.

However the author considers that the material presented in this work will be useful for constructors, welding technicians, and other specialists associated with the planning, manufacture, testing, and maintenance of dissimilar welded structures.

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USSR

ZAKS, I. A., Svarka Raznorodnykh Staley, Izd-vo Mashinostroyeniye, 1973, 208 pp

All critical comments on the content of this work will be accepted with appreciation.

The author expresses appreciation to Doctor of Technical Sciences V. N. Zemzin for valuable advice and assistance in preparing the manuscript.

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ZAKS, I. A., Svarka Raznorodnykh Staley, Izd-vo Mashinostroyen-iye, 1973, 208 pp

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ZAKS, I. A., Svarka Raznorodnykh Staley, Izd-vo Mashinostroyen-iye, 1973, 208 pp

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ZAKS, I. A., Svarka Raznorodnykh Staley, Izd-vo Mashinostroyeniye, 1973, 208 pp

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ZAKS, I. A., Svarka Raznorodnykh Staley, Izd-vo Mashinostroyen-iye, 1973, 208 pp

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USSR

UDC 621.791.05:669.15'24'25-194:620.183.669.786

ZHITNIKOV, N. P., Engineer, and ZAKS, I. A., Candidate of Technical Sciences

"Effect of Nitrogen on the Structure of Austenitic Weld Metal"

Moscow, Svarochnoye Proizvodstvo, No 8, Aug 71, pp 5-7

Abstract: The article describes results of a study of the effect of nitrogen on ferrite content in the structure of deposited chromium-nickel metal of the 20Cr-11Ni-2Mo-V and 20Cr-9Ni-Nb types, as well as the initial structure of ingots weighing 15 kg made of steel of the 20Cr-12Ni-Nb-V type. Estimates were made of the coefficients for the transition of nitrogen into the deposited metal from the electrode coatings into which the nitrogen was introduced as nitrided ferrochrome. In addition, the attempt was made to establish an analytic relation between the ferrite content of the metal structure and its chromium-nickel equivalents. Five batches each of electrodes were made with experimental coatings based on EA-400/10U electrodes applied to 4-mm-diameter Sv-04Kh19N11M3 wire and TsT-15-1 electrodes applied to 5-mm-diameter Sv-08Kh19N10B wire. Coatings were applied by the dip method. A bead 25 mm high and 20 mm wide was deposited by the multiple-bead method on plates of 0Kh18N10T steel.

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USSR

ZHITNIKOV, N. P., and ZAKS, I. A., Svarochnoye Proizvodstvo, No 8, Aug 71, pp 5-7

It was found that the austenizing effect of nitrogen in chromium-nickel metal varies according to its content in the metal and the additional alloying of the metal with niobium, vanadium, molybdenum, and manganese. A formula is derived for calculating the ferrite content, and Delong's refined structural diagram is given. Coefficients are suggested for nitrogen in the calculation of nickel equivalents. An analysis of the calculation results shows that for an increased nitrogen content in metal built up with electrodes based on EA-400/10U and TsT-15 electrodes, coefficient 22 should be used for estimating the nitrogen in the nickel-equivalent formula, coefficient 26 for type 20-12 cast steel alloyed with niobium, vanadium, and nitrogen. For chromium-nickel metal containing up to 14 percent ferrite the ferrite content can be calculated directly according to the derived formula. There is a decrease in the coefficients for the transition of nitrogen into the deposited metal from the nitrided ferrochrome of the electrode coating with an increase in the nitrogen content of the coating. An analysis of type 20-12 steel was made by G. D. PIGROVA at the Central Scientific Research, Planning and Design Boiler and Turbine Institute imeni I. I. Polzunov.

2/2

USSR

UDC: 616-036.882-092.9-036.81-008.921.1

BULANOVA, O. N., ZAKS, I. O., and NOVODERZHKINA, I. S., Laboratory of Experimental Physiology for Reanimation of the Organism, Academy of Medical Sciences USSR, Moscow

"Dynamics of the Acid-Base Equilibrium in the Restorative Period After Circulatory Arrest Induced by Asphyzia"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 6, Nov/Dec 70, pp 13-16

Abstract: After 2½ and 6 min of clinical death induced in 24 dogs by mechanical asphyxia, reanimation was initiated with cardiac massage, injection of epinephrine, and forcing a small amount of blood into an artery. In some experiments, an equal amount of blood was suctioned from the right heart and artificial respiration was conducted. The dynamics of pH, pCO_2, and total organic acids was traced for 24 hours and the results compared with those obtained in earlier experiments in which death was caused by bleeding. Significant differences in these indices were observed only during the agonal stage and first few minutes of the post-reanimation period. Thereafter, uncompensated alkalosis and secondary hypoxia developed, regardless of the manner of death. The six animals in

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BULANOVA, O. N., et al, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 6, Nov/Dec 70, pp 13-16

which blood was suctioned from the right heart revived after 6 min of clinical death, while none of the six other animals in which this procedure was not carried out survived. All of the animals exposed to anoxia for 12 min, 7 sec survived, but when the period of exposure was extended to 13 min, 42 sec all of the animals died. Even the relatively small time difference (1 min, 35 sec) was apparently sufficient to determine the possibility of restoration of functions.

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USSR

UDC 632.95

SUPIN, G. S., BEZUGLYY, S. F., MAKAROVA, S. V., OVSISHCHER, M. R., KALASHNIKOVA, V. N., NIKHEYEVA, S. YA., and ZAKS, P. G.

"Mercurometric Volumetric Method of Determining Phthalophos (With Visual and Amperometric Endpoint)"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow, 1970, pp 81-83 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N409)

Translation: A specimen containing phthalophos (I) is hydrolyzed in an alkaline medium, the resultant dimethyl dithiophosphate is volumetrically analyzed with 0.01 N $Hg(NO_3)_2$ in the presence of a 1% alcohol solution of diphenylcarbazone until the pink color becomes lilac blue. Amperometric titration is done with a vibrating platinum electrode or a dropping mercury electrode relative to a saturated Hg_2Cl_2 electrode. The sensitivity of amperometric titration is 0.06 mg of I, and that of the visual method is 0.6 mg of I.

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USSR

UDC 632.95

MANDEL'BAUM, YA. A., NIKISHOVA, G. YE., ZAKS, P. G.

"Phthalophos"

V sb. Khim. sredstva zashchity rast. (Chemical Means of Plant Protection -- collection of works), vyp. 1, Moscow, 1970, pp 5-8 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N427)

Translation: The physical and chemical properties of phthalophos (I), the toxicity, the method of analysis and means of obtaining I and chloromethyl-phthalimide are described.

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USSR

MANDEL'BAUM, YA. A., NIKISHOVA, G. YE., NAGAYUK, I. N., and ZAKS, P. G.

UDC 632.95

"Phosalone"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 25-28 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N455 by T. A. Belyayeva)

Translation: The article shows the physical and chemical properties of phosalone, its toxicity, the method of producing it from $(EtO)_2PSSNa$ and chloromethylchlorobenzoxazolone, and the method of analysis. A method is devised for chloromethylation of chlorobenzoxazolone. Phosalone can be used in the form of a 20% emulsion concentrate and a 30% wettable powder.

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1/2 032 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PIEZORESISTANCE AFFECT IN SBSI -U-

AUTHOR-(03)-ZAVYALOVA, A.M., ZAKS, P.L., SYRKIN, L.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1580-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR, PHYSICS

TOPIC TAGS--ANTIMONY, IODIDE, SINGLE CRYSTAL, SULFUR COMPOUND, PHASE TRANSITION, HYDROSTATIC PRESSURE, HIGH PRESSURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0962 STEP NO--UR/0181/70/012/005/1580/1582

CIRC ACCESSION NO--AP0133048

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720013-1"

2/2 032 UNCLASSIFIED

CIRC ACCESSION NO--AP0133048 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF HYDROSTATIC PRESSURE (1-1000 ATM) WAS INVESTIGATED OF DARK COND. OF SBSI CLOSE TO THE POINT OF THE PHASE TRANSITION ON POLYCRYST. SPECIMENS AS WELL AS ON SINGLE CRYSTALS. FROM RESULTS OF THE MEASUREMENTS OF THE PRESSURE DEPENDENCE OF SP. RESISTANCE, THE COEFF. OF PIEZORESISTANCE AT HYDROSTATIC PRESSURE WAS CALCD., WHICH IS A COMBINATION OF LONGITUDINAL AND TRANSVERSE COEFFS. IN THE REGION OF THE PHASE TRANSITION, A SHARP MAX. HAS OBSD. IN THE DEPENDENCE OF THIS COEFF. ON TEMP. WITH INCREASED PRESSURE, THE MAX. IS SHIFTED TOWARDS LOWER TEMPS. AND ITS MAGNITUDE DECREASES MONOTONICALLY, BUT STILL REAMINS LARGE EVEN AT TEMPS. FAR FROM THE PHASE TRANSITON. PRESSURE DERIVS. OF THE ENERGY OF THE ACTIVATION AND THE WIDTH OF THE FORBIDDEN BAND HAVE MAX. AT THE PHASE TRANSITION WHICH WITH INCREASED PRESSURE ARE SHIFTED TOWARD LOWER TEMPS.

UNCLASSIFIED

USSR

ZAKSTEL'SKAYA, L., Professor, All-Union Scientific Research Institute for Influenza, Ministry of Health USSR

"Advance on Influenza: Accomplishments and Problems"

Moscow, Nauka i Zhizn', No 5, 1972, pp 149-151

Abstract: Research is being conducted by the author's institute in conjunction with the Institute of Virology imeni . for D. I. Ivanovskiy, Academy of Medical Sciences USSR. Many laboratories in all geographic parts of the country are collected data which eventually are transmitted to the World Center for Influenza Research in London. The author discusses the influenza virus's ability to appear in a wide variety of forms. Statistical analysis reveals that all major epidemics in the Soviet Union from 1949-1971 were parts of global infections, which usually originated in Asia, Oceania, or Northern Australia. The rapidity of spread can be practically the equivalent of the speed of modern transportation, but this is not always the case. The recent epidemic starting in the fall of 1971 engulfed Hungary, Bulgaria and Romania by the beginning of November, but cropped up in Moscow only by the end of that month and in the GDR only in January 1972. A similar retarded spread was observed in 1964-65. The reasons for this varying rate of epidemic

USSR UDC 576.858(Koronavirus).097.45

SHEBOLDOV, A. V., ZAKSTEL'SKAYA, L. Ya., and ZHDANOV, V. M., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Sedimentation and Density Characteristics of Coronavirus"

Moscow, Voprosy Virusologii, No 1, 1973, pp 59-64

Abstract: A method for labeling coronavirus with H^3-uridine after its intracerebral inoculation into newborn mice followed by purification and concentration of the virus has been developed. High-speed centrifugation of the resulting preparations in a sucrose density gradient and equilibrium centrifugation in a cesium chloride density gradient showed virions of coronavirus strain OC43 to have a sedimentation constant of 280S and a buoyant density of 1.24 gm/ml, while internal ribonucleoprotein had a sedimentation constant of 180S and density 1.31 gm/ml. Virion parameters are more similar to those of arboviruses and myxoviruses and less so to those of paramyxoviruses, while ribonucleoprotein parameters resemble those of the latter. Detergent treatment of the preparations causes them to lose hemagglutinating ability but some infectivity was maintained, probably because the hemagglutinin-containing lipid membrane is destroyed but ribonucleoproteins, which can stimulate infection, remain intact. Virions and subviral structures are unusually fragile and tend to degenerate spontaneously.

USSR

ZAKSTEL'SKAYA, L., Nauka i Zhizn', No 5, 1972, pp 149-151

development could be of use in organizing the struggle against influenza. Research into immunity and the production of antibodies indicates that antibodies to fight influenza are imperfect. They are produced against the first type of influenza virus contracted, but are not effective against other types. Later antibodies are produced in insufficient quantities and soon disappear from the the bloodstream. Immunity to virus type A lasts 1.5 to 2 years, to type B -- approximately 4 years. Epidmeic outbreaks occur with about these frequencies. In between, influenza infects those who had avoided the most recent mass outbreak. Influenza also affects the animal world in types which are not in all ways similar to those of man.. During the "Spanish" flu pandemia in 1918 in Iowa there was a flu-like epidemic in pigs. In 1956 in Czechoslovakia and in 1963 in the U.S. there were respiratory tract epidemics in horses caused by a type A influenza virus which was distinct from animals, the obverse does occur. However, if a human virus and an animal virus infect a cell of an animal organism, a hybrid or recombinant strain develops which can infect man and start a new epidemic. Transitional viruses occur, such as observed in the Massachusetts and Wisconsin turkey epidemic of 1965-66 when the virus isolated contained protein related to that in the A_2

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USSR UDC 616.988.75(A2)-06:616.981.25]-092.4:57.085.23

TOKAR', R. G., ZAKSTEL'SKAYA, L. Ya., and SHENDEROVICH, S. F., Vladivostok Scientific Research Institute of Epidemiology and Microbiology; Institute of Virology imeni Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Results of a Combined Infection of Tissue Culture With Influenza Virus A2 and Staphylococcus"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 48, No 6, Jun 71, pp 100-103

Abstract: Reports indicating the possible role of Staphylococci in the development of postinfluenzal pneumonia in children prompted experimental investigations to determine the combined effect of influenza virus A2 and Staphylococcus in infection of cell cultures. A tissue culture of a trypsinized fetal human kidney in culture medium No 199 with bovine serum and maintenance medium with aminopeptide was infected with influenza virus A2 Hong Kong 1/68. Within 24, 48, 72, and 96 hours, pathegenic strain No 239 and nonpathogenic strain No 112 of Staphylococcus were added to the culture. Within 24, 48, 72, 96, and 120 hours of the addition of Staphylococci, virological and bacteriological examinations were conducted. It was found that influenza virus A2 caused no

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USSR

TOKAR', R. G., et al, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 48, No 6, Jun 71, pp 100-103

cytopathic changes in the tissue culture. The addition of Staphylococci, however, induced pronounced cytopathic changes, resulting in degeneration of a large number of cells. Changes induced by the nonpathogenic strain No 112 were not quite as pronounced as those caused by strain No 239. It was established that the addition of the pathogenic strain of Staphylococcus stimulated virus reproduction and intensified viral infectious activity. In the presence of the influenza virus, Staphylococci completely retained viability, and no changes in pigment formation, lecithinase or hyaluronidase activities were noted. The pathogenic properties of Staphylococcus strain No 239 were somewhat enhanced.

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USSR

UDC 576.858.75.095.383

ZAKSTEL'SKAYA, L. Ya., and SHENDEROVICH, S. F., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"The Mechanism of Interference of Respiratory Synchtial Virus With Influenza A2 Virus"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 70, pp 552-555

Abstract: Influenza A2 virus and respiratory-syncytial virus are in the same class of myxoviruses but differ in various respects. When a tissue culture is concurrently infected with both of these viruses, interference takes place. To investigate the mechanism of this phenomenon, the V-antigen, an inactive hemagglutinating preparation of influenza virus was used. It was shown that V-antigen is adsorbed on the surface of a culture of human embryonic kidney cells causing short-duration (maximum, 25 hours) but strong hemadsorption. Pretreatment of the cell culture with V-antigen of influenza A2 virus inhibits the multiplication of both homologous virus and the RS virus in that system.

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UDC 576.858.75(A2)095.38:576.858(RS)

USSR

SHENDEROVICH, S. F., and ZAKSTEL'SKAYA, L. Ya., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Interaction of Influenza A2 and Respiratory Syncytial Viruses in a Mixed Infection"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 473-477

Abstract: Influenza A2 virus and respiratory syncytial virus multiplied readily in human embryo tissue culture when optimum infective doses were used (0.001 EID_{50}/cell and 0.01 TID_{50}/cell, respectively). However, inoculation of the culture with both viruses resulted in mutual interference with reproduction. Influenza virus added in large or small doses after the culture had already been inoculated with respiratory syncytial virus, markedly limited and slowed the reproduction of the latter. Reproduction of influenza virus in cells subsequently inoculated with respiratory syncytial virus likewise declined, but to a lesser extent.

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USSR UDC 616.921.5-036.22(470.51)"1966-'967"

AKSENOV, V. A., ORLOVA, N. N., SELIDOVKIN, D. A., AKSENOV, L. A., ZORIN, V. S., VOLOGHKOV, A. D., GLADINA, YE. B., SAMUSEV, N. F., ZAKSTEL'SKAYA, L. YA., and YEVSTIGNEYEVA, N. N., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Ministry of Health USSR

"Some Features of the 1966-1967 Influenza Epidemic in Glazov"

Moscow, VoProsy Virusologii, No 1, 1970, pp 97-101

Abstract: This epidemic occurred in two waves: the first in November-December, 1966, when few cases of influenza or other acute respiratory diseases were reported in most of the USSR and localities adjacent to Glazov, and the second in February, 1967. The first wave affected mostly young children, while the second wave affected children and adults to almost the same degree, 10.6 and 9.8 per 100 persons. The course of the disease was severe among children, but relatively mild among adults. The high incidence of influenza in the first wave, characteristic dynamics of the curve with a sharp rise, quick attainment of a peak, and sharp drop, as well as the results of serological examinations, implicated the A_2 virus as the 1/2

USSR

AKSENOV, V. A., et al., Moscow, Voprosy Virusologii, No 1, 1970, pp 97-101

causative agent. The second wave was attributed to the B virus. A peculiar virus - an atypical A_1 strain with altered antigenic structure - was also isolated during the epidemic. However, the absence of antibodies in both children and adults indicated that it did not play an etiological role in the outbreak.

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1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF CADMIUM AND THALLIUM CATIONS ON THE ADSORPTION PROPERTIES OF RHODIUM -U-

AUTHOR-(03)-SOKOLSKIY, D.V., ZAKUMBAYEVA, G.D., BEKETAYEVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1017-20

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CURRENT DENSITY, METAL ELECTRODE, ELECTROLYTE, CADMIUM, THALLIUM, ADSORPTION, RHODIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0897 STEP NO--UR/0057/70/044/004/1017/1020

CIRC ACCESSION NO--AP0131483

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131483

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CURRENT D. MINUS PHI POTENTIAL CURVES OF AGED RH-PT ELECTRODE, DIPPED IN 1 N H SUB2 SO SUB4 CONTG. 2 TIMES 10 PRIME NEGATIVE3 MINUS 1 N CDSO SUB4 OR TL SUB2 SO SUB4 WERE MEASURED AT 20, 40, AND 60DEGREES. CATIONS CD PRIME3 POSITIVE AND TL PRIME POSITIVE DECREASED THE H ADSORPTION CAPACITY OF THE RH SURFACE BY OCCUPYING ITS ACTIVE CENTERS. A DECREASE IN THE ENERGY OF THE BOND RH-H WITH INCREASING AMTS. OF CD PRIME2 POSITIVE AND TL PRIME POSITIVE IN THE ELECTROLYTE WAS OBSD. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

USSR

ZAKUSILO, O. K.

"Necessary Conditions of Convergence of Reducing Semi Markov Processes"

Teoriya Veroyatnostey i mat. Stat. Mezhved. Nauch. sb. [Theory of Probabilities and Mathematical Statistics, Interdepartmental Scientific Collection], 1972, No 7, pp 65-69 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V41 by the author).

Translation: The necessary conditions of convergence of the sums of additive-type functionals fixed in a Markov chain with finite set of states are studied.

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UDC: 519.2

ZAKUSILO, O. K.

"Thinning Semi-Markov Processes"

Teoriya veroyatnostey i mat. stat. Mezhved. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1972, vyp. 6, pp 54-59 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V66)

Translation: Limiting distributions of the duration of a process in state i are studied for thinning semi-Markov processes with a finite number of states. Author's abstract.

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USSR

ZAKUSOV, V., Director, Institute of Pharmacology, Academy of Medical Sciences USSR

"A Health 'Factory'"

Moscow, Sotsialisticheskaya Industriya, 10 Dec 71, p 2

Abstract: Soviet pharmacology has made great strides forward in recent years. During the last five-year plan, production of medicinal substances was increased 1.72-fold and more than 40 new synthetic items were put into production. However, the growing needs of medical science and practice are still not being satisfied, and the primary reason for this is delay in implementing scientific results. Thus scientists have labored long and hard to develop such new drugs as: gigronium (a short-term ganglion blocking agent which reduces arterial pressure); karbardin (the first original Soviet drug for psychological purposes, used with mentally ill); anatruxonium (a muscle relaxer used during operations); and etmozin (medicine for treating disruptions of heart rhythm). All of these were synthesized during 1963-1965, all have undergone clinical testing, and all have been approved by the USSR Ministry of Health's Pharmacology Committee. But none of them have been put into production. Of course we can understand the difficulties of the chemical

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ZAKUSOV, V., Sotsialisticheskaya Industriya, 10 Dec 71, p 2

pharmaceutical industry, but nonetheless the tasks posed by the 24th CPSU Congress must be fulfilled and this will require improved work. Three specific needs can be singled out for the industry at the present time. Most important is the shortage of small shops; most new drugs are only produced in small batches and their action is long-lasting, so small facilities are essential. Secondly, it seems that the central laboratories at plants are not being used well; scientists are not well paid, they serve basically to solve production problems which arise and, as a result, these labs are poorly staffed and equipped. Finally, it is necessary to revise the system for paying bonuses for introducing new types of articles. At the present time innovations are judged on a purely economic basis, with no consideration of medicinal qualities which are, after all, the main thing. The goal is to provide doctors with effective medicines, not economize on production in the industry.

2/2

ZAKUSOV, V. V.

JPRS 56019
17 May 72

UDC: 615.015:001.8

METHODOLOGICAL ISSUES IN PHARMACOLOGY

[Article by V.V. Zakusov, N.N. Barkov, Yu.V. Burov (Moscow); Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 3, 1972, pp 76-82]

In modern times, the only effective methodology of science is materialistic dialectics. Since dialectical materialism discloses the overall patterns of the world, these patterns also extend over medical science.

Specific, special laws are a manifestation of generalities under concrete conditions, and generality, in turn, is manifested via specific patterns. The thesis of dialectical materialism on the universal relationship between phenomena must necessarily be taken into consideration when analyzing medical problems. Of course, when considering specific phenomena, one has to artificially abstract them from certain links. But ultimately, an overall (complex) analysis is required to avoid unilateral judgments. For example, in the course of pharmacological investigation of new chemical compounds, the researcher obtains information about their different types of activity. Each type of activity, individually, could permit different (and often contradictory, in relation to each other properties) determination of the specifics in the action of the preparation. However, the set of data obtained permits more precise evaluation of the nature of action of a substance and identification thereof as belong to a specific group of pharmacological agents. V.I. Lenin indicated that as we move up from the concrete to the abstract, the investigator does not digress from truth (if the abstract is correct), he comes closer to it, since all serious abstractions reflect nature more deeply.

A fact is the reflection of some aspect of a subject (object) or phenomenon in man's consciousness. This means that the fact has a subjective component too, and that one should avoid a simple pursuit of the "logic of facts." Very often, investigators evaluate differently the same fact (for example, the same investigative method or set of properties of a drug). Dialectical materialism, however, is the method that allows the investigator to be properly oriented in different, even contradictory, facts, and to find the true link between them.

The principle of complementarity introduced by Bohr is very important in gaining knowledge of basically new phenomena; i.e., the use of mutually

USSR

UDC 615.214.2.015.45:612.26

VYSOTSKAYA, N. B., ZAKUSOV, V. V., OSTROVSKAYA, R. U., and CHUMINA, Z. N., Laboratory of the Pharmacology of the Nervous System, Institute of Pharmacology, Academy of Medical Sciences USSR, Moscow

"The Effect of Sodium Oxybutyrate on Oxidative Processes in Brain Tissue During Hypoxia"

Moscow, Byulleten' Eksperimentalnoy Biologiyi i Meditsiny, No 4, 1970, pp 70-72

Abstract: Experiments with mice demonstrated the ability of sodium oxybutyrate to increase the intensity of oxidative processes in the cerebral cortex and the spinal cord under conditions of normal respiration. The ability of sodium oxybutyrate to prevent the development of inhibition of tissue respiration in animals under conditions of hypoxia was also shown. It was demonstrated that, in this respect, sodium oxybutyrate differs from typical narcotics and tranquilizers. Neither nembutal nor aminazin reduced the degree of inhibition of tissue respiration caused by hypoxia.

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USSR

UDC 616-008.922.1.94-092.9-085.214.22-039.71

ZAKUSOV, V. V. and OSTROVSKAYA, R. U., Laboratory of Nervous System Pharmacology (Dir. Academician, USSR Academy of Medical Sciences V. V. Zakusov), Institute of Pharmacology, USSR Academy of Medical Sciences, Moscow

"Increased Resistance of Mice to Hypoxia Under the Influence of Tranquilizers of the Benzodiazepine Series"

Moscow, Byulleten Eksperimentalnoy Biologii i Meditsiny, Vol 71, No 2, Feb 71, pp 45-47

Abstract: Hypoxia frequently accompanies surgery as a result of oxygen deficiency of the plasma in peripheral vessels. Also, hypoxia may develop at various stages of an operation, such as in interruption of blood circulation. It is therefore important to study all compounds administered during operations for their effects on hypoxia. The effect of diazepam, chlordiazepoxide, and nitrazepam on the survival time of white mice in a test chamber with reduced oxygen content (8.7 vol %) was studied. The test substances were administered intraperitoneally in doses of 10 mg/kg. Meprobamate (in doses of 50 and 100 mg/kg) and aminazin (in doses of 5 and 20 mg/kg) were included in this study for comparison purposes. Diazepam (at doses substantially below toxic doses) was most effective in prolonging the survival of mice under the

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ZAKUSOV, V. V., et al, Byulleten Eksperimentalnoy Biologii i Meditsiny, Vol 71, No 2, Feb 71, pp 45-47

above conditions, but the other tranquilizers also exhibited beneficial effects. Meprobamate and aminazin did not show a pronounced protective effect. It was postulated that the antispasmodic effect and the hypodynamia effect, which are of great importance for the activity of barbiturates during hypoxia, are not essential for benzodiazepine derivatives. Rather, the protective effect of these compounds is attributed to some specific intervention in the metabolism whereby the sensitivity of the tissues to oxygen insufficiency is reduced. Preliminary experiments indicated that the cortical structures of the brain especially appear to derive enhanced resistance to oxygen deficiency. It was concluded that diazepam will find clinical use.

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1/2 032 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--EFFECT OF SODIUM OXYBUTYRATE ON OXYDATION IN BRAIN TISSUE UNDER HYPOXIA -U-

AUTHOR-(04)-VYSOTSKAYA, N.B., ZAKUSOV, V.V., OSTROVSKAYA, R.U., CHUMINA, Z.N.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 4, PP 70-72

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--OXIDATION, BRAIN, HYPOXIA, RESPIRATION, RAT, NARCOTIC, TRANQUILIZER, SODIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1582 STEP NO--UR/0219/70/069/004/0070/0072

CIRC ACCESSION NO--AP0106328

UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0106328
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABILITY OF SODIUM OXYBUTYRATE TO INCREASE THE INTENSITY OF OXIDATION IN BRAIN CORTEX AND BRAIN STEM UNDER CONDITIONS OF NORMAL RESPIRATION AND TO PREVENT INHIBITION OF TISSUE RESPIRATION DEVELOPING IN ANIMALS UNDER HYPOXIA WAS ESTABLISHED IN EXPERIMENTS ON RATS. IT WAS DEMONSTRATED THAT SODIUM OXYBUTYRATE IN THIS RESPECT DIFFERS FROM TYPICAL NARCOTICS AND TRANQUILISERS. NEITHER NEMBUTAL, NOR AMINAZINE REDUCED THE DEGREE OF INHIBITION OF THE TISSUE RESPIRATION CAUSED BY HYPOXIA.

UNCLASSIFIED

USSR

ZAKUSOV, V. V.

"Sleeping Pills"

Moscow, Nedelya, No 7, 9-15 Feb 70, p 13

Abstract: In an interview with a correspondent of the magazine, Dr. V. V. Zakusov discusses the physiology of sleep, causes of insomnia, effects of various somnifacients and tranquilizers, the mechanism of action of psychotropic drugs, and some side effects. The dangers of self-medication with these drugs in case of insomnia and persistent headache are mentioned. Contraindications for nembutal, veronal, luminal, dimedrol, and others are listed.

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USSR

UDC 614.445(497.24):576.851

BABAGAMOVA, E. YE., ZAKUTINSKAYA, N. A., MAMEDZADE, A. U., Candidate of Medical Sciences, MAMEDOVA, S. A., and MEDVEDEVA, E. P., Azerbaydzhan Anti-plague Station

"The Vibrio Content in Rivers and Some Open Water Basins Bordering on Azerbaydzhan," (Report One)

Baku, Azerbaydzhanskiy Meditsinskiy Zhurnal, No 5, May71, pp 50-53

Abstract: A study was made of the vibrioflora (particularly cholera vibrios) of the Araks river, Apsheronskiy canal, and Caspian sea, all waters bordering on Iran and long known as an epidemiological focus of cholera, from which the disease frequently spread to Russia. During the years 1967-1968 samples gathered from the waters of the Araks river, Apsheronskiy canal, and Caspian Sea contained 96, 197, and 146 different types of vibrios comprising six groups (Heiberg's classification). Most types were obtained in the months between May and October. Most numerous and epidemiologically interesting were the vibrios in group one, which included also the El Tro Ogawa sero-type. Of the vibrios in this group, 18-18.7% of the total number of vibrios gathered from the waters of Raks river and the canal and 8.9% of those gathered from the Caspian Sea were agglutinated by cholera O serum in different

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BABAGAMOVA, E. YE., et al., Azerbaydzhanskiy Meditsinskiy Zhurnal, No 5, May 71, pp 50-53

dilutions. On the basis of Heiberg's classification the vibrios gathered from Araks river were grouped as follows: group I contained 29.2%, group II -- 23.6%, group III -- 2.2%, group LV -- 14.6%, group V -- 1.2%, and group VI -- 29.2%; from Apsheronskiy canal: group I -- 52.3%, group II -- 33%, group III -- 1.5%, group IV -- 0.5%, group V -- 1.5%, and VI -- 11.2%; from Caspian Sea: group I -- 51.4%, group II -- 12.3%, group III -- 4.7%, group V -- 13%; group VI -- 18.6%. No group IV vibrios were found in the Caspian Sea. The medical and sanitary workers of Azerbaydzhan SSR have been warned that the presence of El Tor and other vibrios which are agglutinated by cholera O serum presents a constant threat of a cholera epidemic outbreak, and that at all times the necessary prophylactic measures should be enforced.

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USSR

UDC 621.384.6.01

BOGOMOLOV, A. S., ZAKUTOV, YE. M., and SHEBOLAYEV, I. V., Institute of Chemical Kinetics and Combustion, Siberian Department of the Academy of Sciences, USSR, Novosibirsk

"An Analyzer for the Energy and Phase Distribution of Electrons in a Beam"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May-June 1973, pp 27-30

Abstract: A description is given of the design and operation of an analyzer of the phase and energy current-density distributions of the particles in electron guns. The deflecting system consists of two identical cylindrical resonators, called a double resonator. The relative position of the cavities of the double resonator, and their common position with respect to the beam under investigation, is so chosen that at a specific phase shift among the oscillations in the cavities, the double resonator produces circular scanning of the beam on the plane of electron registration, for example on a fluorescent screen. A characteristic feature of the double resonator consists in the fact that two types of fields are used for deflection of the electrons -- a transverse magnetic field in relation to the beam, and an electrical one that is longitudinal with respect to the beam; this permits the conduct of precise measurements of electron distribution with respect to the energies in various phase sections of the

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USSR

BOGOMOLOV, A. S., et al., Pribory i Tekhnika Eksperimenta, No 3, May-June 1973, pp 27-30

beam. The analyzer is applicable to electron beams with an energy from 10 to 3000 kev. 3 figures. 2 references.

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USSR UDC 539.3:534.1

ASADULLIN, G. E., and ZALALDINOV, F. Z.

"The Stability of Elastic Cylindrical Shells With the Simultaneous Action of Deflection and Axial Compression"

Kazan', Sb. Aspirantsk. Rabot. Kazan. Un-t Tochn. Nauki. Mekh. Giz. (Collection of Graduate Student's Works. Kazan' Univeristy. Exact Sciences, Mechanics, Physics,), 1971, pp 26-34 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72., Abstract No 2V275 by V. V. Kabanov)

Translation: Within the framework of the theoretical and experimental method of A. V. Sachenkov (Collection of Research Works on the Theory of Plates and Shells. No 6-7 Kazan', Kazan' University, 1970, pp 391-433, RZhMekh, 1971, 3V395), an investigation is made of the stability of a bracket-fastened circular cylindrical plate, loaded on the free edge, through a rigid frame, by a transverse force and a longitudinal force. The inhomogeneous zero-moment initial stressed state of the shell is replaced by a homogeneous one, so that the problem is reduced to the problem of stability of the shell during combined loading by uniform torsion and axial compression. The coefficients in the equation which determines the stability boundary are obtained from an experiment with 24 shells, made by electric point welding from sheet steel Kh18N9. Scattering of the experimental values of the critical load comprised 2-12%.

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--COMPOSITION AND SOME PROPERTIES OF LIPIDS OF YEASTS GROWN IN TOP PEAT HYDROLYZATES -U-
AUTHOR-(04)-ZALASHKO, M.V., ABRAZTSOVA, N.V., PIDOPLICHKO, G.A., GINZBURG, YA.I.
COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. BIYAL. NAVUK 1970, (2), 76-81
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOSYNTHESIS, LIPID, YEAST, GLUCOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0226 STEP NO--UR/0440/70/000/002/0076/0081

CIRC ACCESSION NO--AP0135722
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0135722
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPARATIVE GROWTH AND BIOSYNTHESIS OF LIPIDS BY YEAST (2 STRAINS OF LIPOMYCES AND ONE STRAIN OF CRYPTOCOCCUS) GROWING ON PEAT HYDROLYZATES AND SYNTHETIC MEDIUM CONTG. GLUCOSE WERE STUDIED. THE RATE OF YEAST LIPID BIOSYNTHESIS IN PEAT HYDROLYZATES IS APPROX. THE SAME AS IN GLUCOSE MEDIUM. REGARDLESS OF THE SUBSTRATE ON WHICH THEY WERE GROWN, THE YEAST LIPIDS CONTAIN PRIMARILY TRIGLYCERIDES (71.3-78.1PERCENT) AND PHOSPHOLIPIDS (4.2-5.5PERCENT). IN THE CASE OF PEAT HYDROLYZATE A CHANGE IN THE RATIO OF SOME LIPID FRACTIONS WAS OBSD. THIS CAN BE ATTRIBUTED TO THE SOURCE OF NUTRIENT C PRESENT IN THE HYDROLYZATE.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REDUCTION OF THE CUFE SUB2 O SUB4 -CUCR SUB2 O SUB4 SOLID SOLUTION
-U-
AUTHOR-(04)-ZALAZINSKIY, A.G., BALAKIREV, V.F., CHEBOTAYEV, N.M.,
CHUFAROV, G.I.
COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1183-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLID SOLUTION, CHEMICAL REDUCTION, CRYSTAL STRUCTURE, COPPER COMPOUND, FERRITE, CHROMATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1411 STEP NO--UR/0078/70/015/005/1183/1185

CIRC ACCESSION NO--AP0135085
UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135085

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REDN. OF CUFE SUB1.75 CR SUB0.25 O SUB4 (SOLID. SOLN. OF TE CUFE SUB2 O SUB4 -CUCR SUB2 O SUB4 SYSTEM) IN H ATM. AT 1000DEGREES GAVE CU, FE, AND FECR SUB2 O SUB4. THE REACTION PROCEEDED IN 7 STAGES WITH THE FORMATION OF TRIGONAL CUMO SUB2 (M EQUALS FE, CR) HAVING CRYST. LATTICE PARAMETERS A 3.028 PLUS OR MINUS 0.005 AND C 17.09 ANGSTROM AND SOLID SOLNS. (CU SUB0.5 FE SUB2.5 O SUB4) SUB1(2.5-Y)-2.5.(CU SUB0.5 CR SUB2.5 O SUB4) SUB(Y-2.5) AND (FE SUB3 O SUB4) SUB0.8.(FECR SUB2 O SUB4) SUB0.2 AS THE INTERMEDIATE SPECIES. THE RESULTS ARE ANALOGOUS TO THOSE OBTAINED FOR REDN. OF CUFE SUB1.75 AL SUB0.25 O SUB4. FACILITY: SVERDLOVSK. INST. MET., SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--EQUILIBRIUM COMPOSITION OF PHASES FORMED DURING THE REDUCTION OF COPPER(II) FERRITE CU SUB0.5 FE SUB 2.5 O SUB4 -U-

AUTHOR-(04)-ZALAZINSKIY, A.G., BALAKIREV, V.F., CHEBOTAYEV, N.M., GHUFAROV, G.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 162-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPPER COMPOUND, FERRITE, IRON OXIDE, HYDROGEN, X RAY ANALYSIS, PHASE ANALYSIS, SPINEL, METAL REDUCTION, VACUUM TECHNIQUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0165 STEP NO--UR/0363/70/006/001/0162/0163

CIRC ACCESSION NO--AP0054961

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054961

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CU SUB0.5 FE SUB2.5 O SUB4 WAS PREPD. BY THE CERAMIC SINTERING OF AN EQUIMOLAR RATIO OF CU SUB2 O AND FE SUB2 O SUB3 IN AIR AT 1040DEGREES FOR SEVERAL DAYS WITH SUBSEQUENT QUENCHING IN WATER. THE H REDN. WAS CARRIED OUT IN A VACUUM INDUCTION SETUP AT 1000DEGREES. IN THE 1ST REDN. STAGE (0-6.5PERCENT), A DECREASE IN THE EQUIL. O PRESSURE IS OBSD. THE PARAMETER OF THE SPINEL PHASE DECREASES (8.414-8.403 ANGSTROM). X RAY PHASE ANAL. SHOWS THAT THE RHOMBOHEDRAL PHASE, CUFEO SUB2, PPTS. OUT WITH INCREASED REDN., WHICH IN TURN CAUSES ENRICHMENT OF THE SPINEL PHASE BY MAGNETITE, AS WELL AS A DECREASE IN THE LATTICE PARAMETER. IN THE 2ND REDN. STAGE (6.5-12.3PERCENT), THE CUFEO SUB2 REDUCES TO CU AND THE (CU SUB0.5 FE SUB2.5 O SUB4) SUB0.30(FE SUB3 O SUB4) SUB0.70 SOLID SOLN. SPINEL, THE LATTICE PARAMETER OF WHICH IS 8.403 ANGSTROM. THE CONCN. DEPENDENCE OF THE LATTICE PARAMETER IN THE BINARY (CU SUB0.5 FE SUB2.5 O SUB4) SUBL NEGATIVEX TIMES (FE SUB3 O SUB4) SUBX SOLID SOLN. FORMING DURING THE REDN. PROCESS WAS OBTAINED. THE SLIGHT DEVIATION FROM VEGARD'S LAW IS PROBABLY CAUSED BY THE DIFFERENT TYPES OF SPINEL STRUCTURE.

UNCLASSIFIED

USSR

UDC 575.111/24:582.259

MUKHAMADIYEV, B. T., KVITKO, K. V., and ZALENSKIY, O. V., Botanical Institute imeni V. L. Komarov, Academy of Sciences, USSR Leningrad; Institute of the Physiology and Biophysics of Plants, Academy of Sciences Tadzhik SSR, Dushanbe; and Chair of Genetics and Selection, Leningrad State University

"Chlorella Mutants Resistant to the Photophosphorylation Inhibitor 3(3,4)-Dichlorophenyl-1,1-Dimethylurea (DCMU). II. Mutagenic Effects of DCMU on Different Strains"

Moscow, Genetika, Vol 7, No 5, 1971, pp 36-41

Abstract: In concentrations of 10^{-3} to 5×10^{-3} M, DCMU has both lethal and mutagenic effects on Chlorella strains of two different origins: Chlorella vulgaris original strain B and its more resistant mutant B_4; and Chlorella pyrenoidosa original strain 82 and its more resistant mutant Z_2. Equal concentrations of DCMU inhibit the original strains to a much greater degree than the mutants. After Chlorella cells adapt to DCMU, its lethal effect becomes considerably smaller. Adaptation to DCMU does not eliminate its mutagenic effect in the above-mentioned concentrations; as a result, the resistant strains are more mutable. The mutations include: 1) mutants which restore their pigment to initial color in the light but lose it again in

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720013-1"

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MUKHAMADIYEV, B. T., et al., Genetika, Vol 7, No 5, 1971, pp 36-41

darkness; 2) mutants which die in the light; and 3) mutants which partly preserve their pigment. The mutagenic effect of DCMU is considerably smaller than that of N-nitroso methylurea, while its lethal effect is markedly greater.

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UDC 577.1:615.7/9

USSR

ZALESOV, V. S., FRIDMAN, A. L., IVSHINA, T. N., IVSHIN, V. P., TARTAKOVSKIY, V. A., PLAKSINA, A. N., and BOLTIK, T. V.

"Synthesis and Study of the Physiological Activity of Organomercury Nitro Compounds. I. Analysis of the Molecular Complexes of bis-(Trinitromethyl)-mercury"

Izv. Yestestvennonauchn. in-ta pri Permsk. un-te (News of the Institute of Natural Sciences, Perm University), 1970, 14, No 10, pp 159-168 (from RZh-Biologicheskaya Khimiya, No 9, May 71, Abstract No 9 N1876 from the résumé)

Translation: Synthesized molecular complexes of bis-(trinitromethyl)-mercury with diethyl-N-nitrosamine, diethylsulfone, dimethylsulfoxide, tetrahydrofurane, dioxane, and hexamethylenetetramine were found to be lacking in neurotropic, anticonvulsive, and antitremor action in mice and rats but possessing weak antimicrobial activity (E. coli, staphylococci) and high toxicity for mice after intraperitoneal injection (LD_{50} 14.8 to 24.5 mg/kg or peroral administration (55 to 124 mg/kg) and for rats after peroral administration (51.4 to 305 mg/kg). Two preparations at toxic doses manifested weak analgesic action.

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1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--A NEW PRINCIPLE OF MODULATION IN STUDIES OF NUCLEAR MAGNETIC RESONANCE IN FERROMAGNETICS -U-

AUTHOR--ZALESSKIY, A.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, PRIBORY I TEKHNIKA EKSPERIMENTA, NO 2, MAR-APR 70, PP 156-157

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR MAGNETIC RESONANCE, FERROMAGNETIC MATERIAL, MAGNETIC MODULATION, NICKEL, IRON POWDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605008/C02 STEP NO--UR/0120/70/000/002/0156/0157

CIRC ACCESSION NO--AP0139948

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139948

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT MAGNETIC MODULATION MAY BE USED FOR RECORDING NUCLEAR MAGNETIC RESONANCE SIGNALS IN FERROMAGNETICS. AN ALTERNATING FIELD WITH AN AMPLITUDE OF UP TO 350 OERSTEDS WAS PRODUCED BY A SOLENOID WITHOUT NOTICEABLE HEATING. THE SPECIMENS WERE PULVERIZED NICKEL AND IRON POWDER. FACILITY: INSTITUTE OF CRYSTALLOGRAPHY, ACADEMY OF SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--DOMAIN BOUNDARY RESONANCE AS A MEASURE OF THE NUMBER OF DEFECTS IN YTTRIUM IRON GARNET CRYSTALS -U-

AUTHOR-(02)-ZALESSKIY, A.V., CHUDAKOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 299-301

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS

TOPIC TAGS--GARNET, CRYSTAL LATTICE DEFECT, IR SPECTRUM, YTTRIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1452 STEP NO--UR/0070/70/015/002/0299/0301

CIRC ACCESSION NO--AP0109512

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0109512
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DOMAIN BOUNDARY RESONANCE WAS STUDIED BY USING A RADIOSPECTROMETER DESCRIBED EARLIER (Z., ET AL., 1969) FOR GARNET CRYSTALS CONTG. DIFFERENT AMTS. OF DEFECTS. THE DEVELOPMENT OF THE CRYSTAL WAS STUDIED IN IR LIGHT. AS THE NO. OF DEFECTS ATTACHED TO THE DOMAIN BOUNDARIES IS INCREASED, THE RESONANCE INTENSITY DECREASES SHARPLY. THIS CAN BE USED TO DET. THE QUALITY OF THE CRYSTALS. FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.376.32.539.143.43

ZALESSKIY, A. V., Institute of Crystallography, Academy of Sciences of the USSR, Moscow

"A New Principle of Modulation in Studies of Nuclear Magnetic Resonance in Ferromagnetics"

Moscow, Pribory i Tekhnika Eksperimenta, No 2, Mar/Apr 70, pp 156-157

Abstract: It is shown that magnetic modulation may be used for recording nuclear magnetic resonance signals in ferromagnetics. An alternating field with an amplitude of up to 350 oersteds was produced by a solenoid without noticeable heating. The specimens were pulverized nickel and iron powder.

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USSR

UDC 632.954 - 547.821

IVASHCHENKO, YA. N., MOSHCHITSKIY, S. D., KARABANOV, YU. V., and ZALESSKIY, G. A.

"Study of Herbicidal Activity of 4-Alkylaminotetrachloropyridines"

Kiev, Khimicheskaya Promyshlennost' Ukrainy, No 3, May-Jun 70, pp 23-24

Abstract: The authors studied the herbicidal activity of a new group of pentachloropyridine derivatives, viz. 4-amino-2,3,5,6-tetrachloropyridine and other 4-alkylamino-substituted derivatives in position 4, obtained by the interaction of pentachloropyridine with alkylamines in a medium of dioxane and methyl alcohol at 40-60°C. All the tested compounds were found to have appreciable physiological activity.

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USSR

UDC 535.37

ZALESSKIY, I. YE., KOTLO, V. N., SEVCHENKO, A. N., Academician of the Academy of Sciences Belorussian SSR, SOLOV'YEV, K. N., and SHKIRMAN, S. F., Institute of Physics of the Academy of Sciences Belorussian SSR, Belorussian State University imeni V. I. Lenin, Minsk

"Study of Chlorophyll-Like Molecule Fluorescence Due to Transitions From High Excited Levels"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 312-315

Abstract: In the case of chlorophyll-like molecules, transitions from high excited levels are of interest because of the possibility that such states of chlorophyll molecules participate in the photosynthesis process. Quasiline spectral data for tetrabenzoporphin (TBP) show that the lifetime of the S_3 level (first component of the Soret band) is not very short, since the width of the quasilines is about 10 cm^{-1}; that is, $\tau_3 \sim 10^{-12}$ sec. The great intensity of the Soret band makes it possible to expect in this case a comparatively high yield of short-wave ("blue") fluorescence $S_3 \rightarrow S_0$, and on

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ZALESSKIY, I. YE., et al., Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 312-315

this basis the authors undertook to search for "blue" fluorescence in TBP and metal complexes thereof. During their study the authors received from Professor M. GOUTERMAN (United States) the manuscript of an article which reported the detection of "blue" Zn-TBP fluorescence, thus agreeing with the authors' data. The present article describes results of a systematic study of "blue" fluorescence in TBP and a number of its metal complexes (zinc, cadmium, copper, vanadium (VO-TBP), palladium) as well as chlorophyll a.

The "blue" fluorescence spectrum of Zn-TBP at room temperature is approximately mirror-symmetric to the Soret band of the absorption spectrum. The excitation spectrum for this fluorescence in the region accessible to measurements coincides with the absorption spectrum. There is no quenching of "blue" fluorescence by heavy atoms. These data indicate that the fluorescence is $(S_2 \rightarrow S_0)$-fluorescence and is not attributable to an impurity. The effect of a solvent and temperature on $(S_2 \rightarrow S_0)$-fluorescence in Zn-TBP

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ZALESSKIY, I. YE., et al., Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 312-315

and the absolute quantum yield of Zn-TBP ($S_2 \rightarrow S_0$)-fluorescence were studied. The "blue" fluorescence in the case of the free base TBP is an order weaker. The radiationless transition $S_4 \rightsquigarrow S_1$ is of a cascade character. No "blue" fluorescence was observed in the studied complexes of TBP with transition metals (V, Cu, Pd) or in the case of chlorophyll a.

The authors thank T. F. KACHURA for preparing the tetrabenzoporphin and the metal complexes thereof, M. V. SARZHEVSKAYA for providing the chlorophyll a, and A. T. GRADYUSHKO and M. P. TSVIRKO for valuable advice.

USSR

UDC 535.5i:535.37

ZALESSKIY, I. Ye., KOTLO, V. N., SEVCHENKO, A. N., Academician of the Belorussian Academy of Sciences; SOLOV'YEV, K. N., SHKIRMAN, S. F., Institute of Physics, Minsk

Variation, with Time, of Porphyrin Fluorescence Polarization and the Shifting of Iminohydrogens in the Porphin Ring"

Moscow, Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972, pp 1314-1317

Abstract: The authors discuss experiments they have performed in which they discovered new characteristics of radiation anisotropy which, when studied in detail, may lead to the solution of certain problems in the structure of porphyrin molecules. These experiments investigated the polarized luminescence of porphyrins in frozen vitreous solutions. The principal subject of this paper is the dependence of that polarization on the time in which the excitation light operates at low temperatures. Measurement of the degree of polarization was made with an ordinary spectropolarimetric device with two monochromators. The fluorescence was excited by monochromatic, linearly polarized light and was observed

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at an angle of 40° with respect to the ray of the exciting light. It was found that the fluorescence of etioporphyrin I, tetrabenzoporphin, and phthalocyanine in frozen glass was substantially depolarized with time. Curves showing that variation are given, together with tabulated data. It was also found that the reorientation of the molecular oscillators is connected with the shift in iminohydrogens at the center of the porphin ring. Diagrams of possible isomeric forms of the porphin molecule are shown.

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ZALESSKIY, I. B.

"Repairable Systems with Accumulation of Disorders"

Vosstanavlivayemye Sistemy s Nakopleniyem Narusheniy [English Version Above], Riga, 1972, 21 pages (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V310 DEP* by the author).

Translation: Systems are studied with possible accumulation of defects, not leading to immediate failure of the entire system. The study of reliability is performed on the assumption that the intensity of appearance of defects, intensity of failure and intensity of repair are independent of time, while the intensity of appearance of defects is also independent of which defects and in which sequence have already been accumulated in this system. Under these conditions, the distribution of probability of states of the repairable system at an arbitrary moment in time is produced (the LaPlace transforms of the desired functions are found), as well as the finite distribution of probabilities of states.

The reliability of the system is analyzed if periodically, with period T, the system is subjected to complete preventative maintenance of constant duration. Produced are: the distribution of probability of states of the system at any moment in time, the finite distribution of

ZALESSKIY, L. B., Vosstanavlivayemye Sistemy s Nakopleniyem Narusheniy, Riga, 1972, 21 pages.

probability of states, the readiness factor at an arbitrary moment of time and its finite expression. It is demonstrated that the value of the readiness factor in the discrete sequence of points mT ($m = 1, 2, \ldots$) approaches its finite value as $m \to \infty$ at the rate of a geometric progression.

It is also shown that at infinity, the readiness factor acts like a periodic function with period T.

Based on the relationships produced, a method is suggested for calculation of the readiness factor, illustrated on the example of a system with one possible disruption, and a numerical example is studied.

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UDC 621.775.24

BERMAN, S.I., ZAIESSKIY, V. I., and IMANOV, Kh. I., Moscow Institute of Steel and Alloys, Chair of Pressing and Forging Production

"Briquetting and Pressing of Granules of Aluminum-Based Alloys"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 4, 1971, pp 127-131

Abstract: Differences in compressive forces on upper- and female dies by briquetting and pressing granules of aluminum-based alloys on a vertical hydraulic press with a nominal pressing force of 200 tons were experimentally investigated. The experimental conditions and investigation results are discussed by reference to diagrams showing the installation, typical oscillograms, and compressive forces on dies. It was found that by a briquetting process of granules with a length-to-diameter proportion of 2.4 of the initial charging, quality bricks can be produced with a minimum energy expenditure in cases when the granules are in aluminum vessels and the briquetting is processed with container lubrication. By this method, the compressive force in the female die rises to 70-75% of the punch force. A further increase of the specific pressure does not produce a higher brick density. By pressing bricks 40 mm high and 39 mm in diameter, the maximum compressive force on dies is approximately 70% of the forces when pressing without lubrication. Six illustr., five biblio. refs.
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USSR UDC 621.775.24

BERMAN, S. I., ZALESSKIY, V. I., and IMANOV, KH. I., Moscow Institute of Steels and Alloys, Department of Pressing and Forging

"Influence of Dimensions and Form of Aluminum Alloy Granules on the Properties and Structure of Pressed Semifinished Goods"

IVUZ, Tsvetnaya Metallurgiya, No 2, 1971, pp 123-125

Abstract: This work presents a study of the influence of the dimensions and form of granules produced by centrifugal spraying on the properties and structure of pressed semifinished goods. Granules of needle and circular shape of V96TS alloy were compared with sections cut from an ingot produced by semicontinuous casting. The granules and ingots were then both used to produce bars, the mechanical properties of which were compared. The strength properties of the bars produced from granules were higher than those produced from the ingot, the strength properties of bars from needle-shaped granules being highest of all. These bars were found to have a finer grain structure than the other two types.
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1/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SPECIFIC OUTPUT OF PULSED LASER ENERGY -U-

AUTHOR--ZALESSKIY, V.LU.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE SPECIFIC OUTPUT OF THE RADIATION ENERGY OF CHEMICAL LASERS. A SIMPLE MODEL OF THE OPERATION OF A CHEMICAL LASER IS CONSIDERED, AND CERTAIN ASPECTS FAVORING AN INCREASE IN THE RADIATION ENERGY OUTPUT ARE REVEALED. THE FEASIBILITY OF THE CONDITIONS UNDER WHICH THE SPECIFIC OUTPUT TENDS TO THE MAXIMUM OUTPUT IS ASSESSED.

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USSR

UDC 534.232.46-8

ZALESSKIY, V. V.

"Concerning Energy Transfer by a Piezoelectric Transducer"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific-Technical Collection. Materials), 1970, Issue 6, pp 97-108 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5A353)

Translation: An analytical investigation is conducted of the operation of a piezoelectric transducer in the range from zero to two resonance frequencies. The characteristic resistances and the attenuation of the piezoelement are presented. Summary.

JPRS 59008
6-73

ZALETKIN, V.M.

VII-4b. EFFECT OF GROWTH CONDITIONS AND GAS ETCHING ON THE CARRIER DISTRIBUTION IN THE GALLIUM ARSENIDE LAYERS

[Article by V. M. Zaletin, G. I. Livkin, V. I. Yudayev, Yu. G. Sidorov, Novosibirsk; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 91]

The methods of electric breakdown with respect to a skew section, measurement of the volt-farad characteristics for interstitial etching of the film and Hall measurements were used to investigate the effect of the conditions of formation of gallium arsenide epitaxial layers in the open chloride system on the electrophysical properties and the concentration profile of these layers. The n^+ substrates were used alloyed with tellurium, tin and silicon. The layers grown on high-resistance substrates were also investigated.

It was found that in the growth temperature range of 765 to 725°C the carrier concentration in the layers decreases with temperature. The dependence of the nature of the concentration distribution of the carriers in the epitaxial layers of gallium arsenide grown on n^+ substrates alloyed with different admixtures was presented as a function of the crystallization temperature of the films.

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TITLE-- CAPTION

NEWSPAPER-- SOVETSKAYA MOLDAVIYA, JANUARY 8, 1970, P 1, COLS 5-6

ABSTRACT-- A PHOTOGRAPH SHOWS I. G. STARUSH, SENIOR ASSOCIATE, AND B. K. ZALEVSKIY, ASSOCIATE, CALIBRATING A VACUUM THERMAL MANOMETER AT THE KISHENEV SCIENTIFIC-RESEARCH INSTITUTE FOR DESIGN OF ELECTRICAL DEVICES /NAUCHNO-ISSLEDOVATEL,SKIY INSTITUT ELEKTRO-PRIBOROSTROYENIYA/.

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DELONE, B. N., Corresponding Member of the Academy of Sciences of the USSR, GALIULIN, R. V., DOLBILIN, N. P., ZALGALLER, V. A., SHTOGRIN, M. I., Mathematics Institute imeni V. A. Steklov, Academy of Sciences of the USSR, Moscow

"On the Three Successive Minima of a Three-Dimensional Lattice"

Moscow, Doklady Akademii Nauk SSSR, Vol 209, No 1, Mar/Apr 73, pp 25-28

Abstract: Let OA be the shortest vector of the three-dimensional lattice Λ, OB — the shortest vector of Λ not parallel to OA, and OC — the shortest vector of Λ not parallel to plane OAB. Three such vectors are called the three successive minima of Λ, and the parallelepiped Π constructed on these vectors is called a reduced parallelepiped.

Theorem 1. The reduced parallelepiped Π is primitive (empty).

This theorem was first geometrically proved by Dirichlet in 1848. This proof has always seemed somewhat complicated to crystallographers, and therefore N. V. Belov proposed a new proof in 1951. In this paper, the authors offer a still simpler proof, and propose an algorithm for reducing three successive minima to a single parallelepiped.

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